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**Biology of diatoms.**—Cell division is described by BERGON<sup>29</sup> for *Biddulphia*, but the nuclear details are not shown. No centrosomes are figured. The principal point of interest in the formation of auxospores is that not one, but two are formed in each cell. Spores (the so-called microspores) have been described and the observations have been disputed. Although the existence of such spores might safely be conceded, this paper describes the development of sporangia and spores so clearly that there can be no doubt either as to their existence or the mode of their formation.—CHARLES J. CHAMBERLAIN.

**Sterile anthers of Ribes.**—JANCZEWSKI<sup>30</sup> has discovered an interesting situation in the pollen of *Ribes*. In the genus there is every stage between entirely fertile and absolutely sterile anthers. Certain subgenera and a few hybrids habitually develop perfect pollen. Most common among the hybrids, however, is a mixture of sterile and fertile pollen grains, in varying proportion. In certain hybrids and in the subgenus *Parilla* the pollen is persistently inert. Degeneration generally occurs after tetrad formation, but sometimes in the mother cell stage.—J. M. C.

**Protoplasmic rotation.**—BIERBERG<sup>31</sup> concludes that rotation and streaming is neither a widespread nor usually a normal phenomenon, but he does not accept Miss KELLER's view that it is a symptom of dying. On the contrary, he finds that it accelerates the transfer of materials more than threefold over diffusion alone. His attempts to account teleologically for the existence of these movements in water plants, according as they have or have not conducting tissues, or are or are not permeable in all parts, are less valuable than his experimental work.—C. R. B.

**Rusts.**—OLIVE<sup>32</sup> has published a popular account of cereal rusts and their life-histories. He confesses that "the problem of the prevention of rusts is such a difficult one that many points still remain to be solved;" and states that "the main thing which can be done at present is simply to record the present status of our knowledge as to the nature of these complicated organisms, and to awaken interest in a knowledge of their habits."—F. L. STEVENS.

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<sup>29</sup> BERGON, P., *Biologie des Diatomées*.—Les processus de division, de rajeunissement de la cellule et de sporulation chez le *Biddulphia mobilensis* Bailey. Rev. Gén. Botanique IV. 7:327-358. pls. 5-8. 1907.

<sup>30</sup> JANCZEWSKI, ED., Sur les anthères stériles des groseilliers. Bull. Acad. Sci. Cracovie 1908: 587-596. pl. 24.

<sup>31</sup> BIERBERG, W., Die Bedeutung der Protoplasmarotation für den Hofftransport in den Pflanzen. Flora 99:52-80. 1908.

<sup>32</sup> OLIVE, E. W., Rusts of cereals and other plants. S. Dak. Agric. Exp. Sta. Bull. 109. June 1908.